

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Oak Ridge**

Site Summary Level: **Portsmouth Gaseous Diffusion Plant**

Project **OR-643 / Portsmouth Surveillance & Maintenance**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0151**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

PURPOSE:

This project along with OR-623 will complete the DOE portion of the Environmental Restoration program for the site. It operate and maintain the existing installed groundwater treatment facilities until regulatory directed cleanup levels are achieved, maintain the groundwater protection program for the site, and accomplish the long term surveillance and maintenance of solid and hazardous waste units and Decontamination and Decommissioning facilities.

SCOPE:

Operate and maintain the ongoing groundwater treatment facilities in compliance with regulatory requirements.

Operate and maintain the ongoing groundwater protection program for the site in compliance with regulatory requirements.

Conduct long-term S&M of Remedial Action units and D&D facilities all in accordance with regulatory and DOE requirements.

TECHNICAL APPROACH:

Cleanup will be in accordance with decisions reached under the Regulatory Authority of the Consent Decree and Consent Order which directs the RCRA Corrective Action process for the site, in compliance with both RCRA and CERCLA regulations.

Under that process, a Corrective Measures Study will develop cleanup alternatives for each site, which requires action. The regulators will then select the preferred alternative for Corrective Measures Implementation.

Remediation technologies will be selected that satisfy remediation goals, are technically feasible, and minimize the Life Cycle Cost for the project. Remediation technologies are listed below in decreasing order or preference:

In-Situ Treatment with the emphasis on Waste Minimization
Waste Isolation via multilayer cap, subsurface barriers, etc.

Removal action with Treatment/disposal of the waste.

ASSUMPTIONS:

D&D of PORTS occurs is initiated in FY 2005, and is accomplished under another project that does not impact this scope.

Groundwater pump and treats will be operational for a minimum of 30 years in accordance with RCRA cleanup requirements.

Only those contaminated sites and facilities currently in the Environmental Restoration Program as defined by the release site database and regulatory

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documentation are considered.

The primary regulatory framework for Portsmouth contaminated sites and facilities will be RCRA and CERCLA.

Groundwater and surface water will be remediated to a level appropriate for its intended use consistent with land use as determined through the RCRA and CERCLA processes.

For risk calculations, a residential receptor is located at the worst case DOE property boundary. Recreational receptors are located on the reservation outside of the limited access area.

Major sources of on-site contamination are contained and/or remediated. The emphasis is on sources that have a future potential to affect offsite residents, the ecology, or on-site workers. Stakeholder discussions to date have resulted in the identification of preferred options to maintain industrial land use within the security fenced area and mixed industrial/commercial and potentially recreational land use within those areas of the federal reservation outside the security fence.

Remediation goals for the upper-most water-bearing unit under the site will be selected with consideration of natural background levels, technical practicability of cleanup, and ALARA criteria.

Once groundwater treatment facilities meet the regulated requirements for groundwater, the groundwater treatment facilities will be abandoned in place awaiting final decontamination and decommissioning of the plant.

Project Status in FY 2006:

The following activities will be ongoing:

Operation of active and passive groundwater treatment systems
Site-wide Groundwater Monitoring Program
Long Term S&M of Remedial Action units and D&D facilities.

Post-2006 Project Scope:

The following activities will be ongoing:

Operation of active and passive groundwater treatment systems
Sitewide Groundwater Monitoring Program

Long Term S&M of Remedial Action units and D&D facilities.

Project End State

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Remedial Action Objectives (RAOs) established by the regulators have been achieved, all groundwater operations, and monitoring have been completed, and all facilities have been transitioned to long-term custodial care.

Cost Baseline Comments:

The estimate is based on conceptual design bills of material (BMs) prepared by each participating design discipline. The craft or crafts that will perform the tasks are identified and the appropriate wage rates are applied. Material and labor pricing is based on current vendor quotes, recent similar job history, the U.S. Army Corp of Engineer's Computer Aided Cost Estimating Systems pricing data base, and nationally recognized databases such as R. S. Means Construction Cost Data, R. S. Means Environmental Cost Handling Options and Solutions, and Richardson's Construction Estimating Standards. Special equipment costs were obtained either by vendor contact or data from similar projects. Cost estimate rates are based on PORTS AES Standard Value File SBL1968A.VAL dated July 17, 1998.

This baseline utilizes the historical cost for Groundwater Operations at the site.

Safety & Health Hazards:

DOE is committed to achieving compliance with laws, regulations, and agreements that protect human health and the environment and is focusing its resources to assess and cleanup inactive waste sites and facilities, to enhance safe and effective waste management operations, to emphasize waste minimization, and to coordinate applied waste research and development (R&D) programs. Safety first is the M&I Contractor core value and is fundamental to every work activity. All accidents are preventable and the contractor strives to achieve "Zero Accident" performance on all jobs. Safety is everyone's responsibility this includes worksite safety, safety of fellow workers, personal safety, public safety, and protection of the environment.

Safety and health-related hazards associated with Environmental Management activities at the Portsmouth Gaseous Diffusion Plant (PORTS) are those related to radiological contamination, hazardous chemicals, and physical trauma. Without proper controls, workers, the public, and the environment may be exposed to these categories of hazards during the completion of remediation, construction, maintenance, or operational responsibilities.

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Safety and health-related hazards associated with Environmental Management activities at the Portsmouth Gaseous Diffusion Plant (PORTS) are those related to radiological contamination, hazardous chemicals, and physical trauma. Without proper controls, workers, the public, and the environment may be exposed to these categories of hazards during the completion of remediation, construction, maintenance, or operational responsibilities.

Safety & Health Work Performance:

Wide ranges of formal and informal processes are in place for identification and analysis of the hazards associated with performing work at PORTS. These processes range from formal, detailed analytical hazard analysis, to informal pre-job assessments by the individuals actually performing the

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work. Programs exist which require specific hazard identification and analysis for each facility at PORTS.

The Integrated Safety Management Process describes the process for implementing S&H for Environmental Management activities at PORTS.

A set of Work Smart Standards has been established and is contractually binding for all Environmental Management activities performed at PORTS. A multi-discipline team of managers, hourly workers, and S&H professionals determined applicable standards. All known existing hazards were considered and applicable standards were selected from federal, state, DOE, and national consensus standards and requirements.

Specific S&H disciplines (e.g., Facility Safety, Fire Protection, and Industrial Hygiene) maintain established individual programs for addressing hazards within their particular areas of expertise.

Various processes exist at all levels for ensuring that work has been properly planned and authorized before it is begun. Complex, large-scale activities may be subjected to formal Operational Readiness Reviews, while routine, low-hazard tasks receive less formal analysis. Different S&H discipline programs to ensure operational readiness (e.g., Facility Safety - Unresolved Safety Question Determination). Computerized work planning processes assist planners in considering/addressing the entire range of safety and health hazards associated with work at PORTS. The workers perform the final readiness check as they examine the equipment, permits, and conditions of the worksite immediately prior to beginning work.

Workers also continually remain alert to changing conditions and unidentified hazards as the job's progress. They are expected to bring issues to the attention of their supervisor. Trained S&H professionals provide field oversight of EM program activities and are alert for unforeseen hazards as well.

The processes for addressing feedback and for continually improving S&H programs and activities are integral parts of the Integrated Safety Management System Process and are integral parts of the Project Delivery Process, which governs all EM activities at PORTS. Feedback received from external assessments, self-assessments, the lessons learned program, incident investigations, and formally submitted employee concerns and from day-to-day interaction with employees is given appropriate consideration. Based on information (feedback) from those sources, corrective actions are initiated with the goal of continually improving the safety and health of the public and employees.

PBS Comments:

Baseline Validation Narrative:

The Oak Ridge Operations Office Environmental Management Life Cycle Baseline (LCB) was submitted by the Managing and Integrating Contractor, Bechtel Jacobs Company LLC, to DOE ORO on April 1, 1999. The final draft LCB will be submitted to DOE ORO on June 1, 1999 after formal receipt and incorporation of comments (due) on May 1, 1999. A validation of the baseline is in process using an independent contractor to DOE ORO. The validation will be ongoing until complete and the final validation report is scheduled to be issued on June 25, 1999.

General PBS Information

Project Validated?

Date Validated:

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General PBS Information

Has Headquarters reviewed and approved project? No

Date Project was Added: 3/10/1999

Baseline Submission Date: 7/1/1999

FEDPLAN Project? Yes

Drivers:	CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
	Y	Y	N	N	N	Y	Y	Y

Project Identification Information

DOE Project Manager: Melda Rafferty

DOE Project Manager Phone Number: 740-897-5521

DOE Project Manager Fax Number: 740-897-3572

DOE Project Manager e-mail address: qp4@cosmail4.ctd.ornl.gov

Is this a High Visibility Project (Y/N):

Planning Section

Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006
PBS Baseline (current year dollars)	98,328	1,373,403	1,471,731	8,814	8,644	8,814	9,423	9,513	11,214	9,361	9,723	10,029	10,290	10,400	10,170
PBS Baseline (constant 1999 dollars)	92,716	562,803	655,519	8,814	8,644	8,814	9,423	9,513	10,983	8,980	9,135	9,229	9,274	9,181	8,793
PBS EM Baseline (current year dollars)	98,328	1,373,403	1,471,731	8,814	8,644	8,814	9,423	9,513	11,214	9,361	9,723	10,029	10,290	10,400	10,170
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	2007	2008	2009	2010	2011- 2015	2016- 2020	2021- 2025	2026- 2030	2031- 2035	2036- 2040	2041- 2045	2046- 2050	2051- 2055	2056- 2060	2061- 2065	2066- 2070
PBS Baseline (current year dollars)	10,516	10,797	10,879	11,032	59,230	65,147	72,281	80,196	88,978	98,722	109,532	121,526	134,834	149,598	165,980	184,155
PBS Baseline (constant 1999 dollars)	8,905	8,955	8,838	8,778	44,295	43,912	43,912	43,912	43,912	43,912	43,912	43,912	43,912	43,912	43,912	43,912
PBS EM Baseline (current year dollars)	10,516	10,797	10,879	11,032	59,230	65,147	72,281	80,196	88,978	98,722	109,532	121,526	134,834	149,598	165,980	184,155
PBS EM Baseline (constant 1999 dollars)	8,905	8,955	8,838	8,778	44,295	43,912	43,912	43,912	43,912	43,912	43,912	43,912	43,912	43,912	43,912	43,912

Baseline Escalation Rates

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
0.00%	0.00%	0.00%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%
2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%

Project Reconciliation

Project Completion Date Changes:

Previously Projected End Date of Project:

Current Projected End Date of Project: 9/30/2070

Explanation of Project Completion Date Difference (if applicable):

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	Actual 1997 Cost:	8,644	Actual 1998 Cost:	9,423
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Project Reconciliation

Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	-18,067	Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):	-488
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	-18,555		

Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):		
Cost Associated with New Scope (+):		
Cost Growth Associated with Scope Previously Reported (+):		
Cost Reductions Due to Science & Technology Efficiencies (-):		
Subtotal:	-18,555	
Additional Amount to Reconcile (+):	656,446	
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	637,891	

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Portsmouth Surveillance & Maintenance Project Start	OR643-001		10/1/1996								
Portsmouth Surveillance & Maintenance Project End	OR643-002		9/30/2070								
Portsmouth S&M Mission Completion	OR-643-003		9/30/2070								

Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Portsmouth Surveillance & Maintenance Project Start	OR643-001			Y							
Portsmouth Surveillance &	OR643-002				Y						

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Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description			
Maintenance Project End														
Portsmouth S&M Mission Completion	OR-643-003					Y								

Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planned 2004
MLLW														
Comm. Disp.	M3	247.00	599.00	846.00					23.00	32.00	32.00	32.00	32.00	32.00
Rem. Waste														
Disposed	M3	98.00	447.00	545.00					6.00	10.00	10.00	10.00	10.00	10.00
Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035	Planned 2036 - 2040
MLLW														
Comm. Disp.	M3	32.00	32.00	32.00	32.00	32.00	32.00	32.00	158.00	146.00	104.00	63.00		
Rem. Waste														
Disposed	M3	10.00	21.00	21.00	21.00	21.00	21.00	21.00	108.00	105.00	87.00	63.00	0.00	
Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total				
MLLW														
Comm. Disp.	M3									823.00				
Rem. Waste														
Disposed	M3									539.00				

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